Tidal Wetlands Conceptual Model Subteam Meeting Notes
July 23, 2014

Participants: Bruce Herbold, Alice Low, Steve Culberson, Larry Brown, Chris Enright, Jenny Bigman, Hildie Spautz, Rosemary Hartman, Jim Hobbs, Jon Cook, Stacy Sherman, Louise Conrad, Pascale Goertler, Julie Garcia, Dave Zezulak, Adam Ballard, Carol Atkins, and Dave Contreras

The focus of the meeting was looking at 7 conceptual models that were developed by the tidal wetlands conceptual model subteam:

- Tidal Wetlands
- Marsh Evolution
- Tidal Exchange
- Food Web
- Aquatic Vegetation
- Species
    - Salmon
    - Delta Smelt

All models (except Delta Smelt) were discussed and suggestions were made to revise them. These models will be presented at the next IEP Tidal Wetlands Monitoring Project Work Team meeting on July 30.

Tidal Marsh Conceptual Model (based on DRERIP model)
Presented by Rosemary Hartman

Tidal Marsh Model Notes:

- Arrows are colored to clarify where they are going
- Wide arrows represent effects of one tier to another tier
- Terrestrial interface represent the structure around the tidal marsh

Comments:

- Perhaps the next step of the current tidal marsh conceptual model is to partition it into winter and summer variability
- The model does not reflect dry dirt to restored tidal marsh habitat
    - This should be addressed in the tidal marsh evolution conceptual model

*The DFW FRPA team will update this model for next week's meeting.

Marsh Evolution Conceptual Model (based on Suisun Marsh model)
Presented by Hildie Spautz

Comments:

- Put External Drivers above Internal Drivers
- Delete the word "Conversion Probability"
- Put a box around "Sub-tidal", "Shallow intertidal", and "Vegetated intertidal marsh"
- Put a single arrow from "Tier 3: Marsh elevation-process of change" to "Tier 4: Restoration Site Evolution"

- Look at the BREACH study to look for clues in marsh evolution
- Incorporate arrow strength (like DRERIP)

*The DFW FRPA team will update this model for next week's meeting.

Tidal Exchange Conceptual Model

Presented by Steve Culberson

Tidal Exchange Model Notes:

- Productivity increases with residence time
- High tidal exchange decreases residence time
- Tidal exchange between marshes decreases with distance

Comments:

- What is the export of marshes to other habitat types (ie shallow water habitat)

*Steve will update this model for next week's meeting.

Food Web Conceptual Model

Presented by Jim Hobbs

Food Web Model Notes:

- Based on DRERIP and BDCP conceptual models
- Landscape attributes try to capture those that occur within a tidal marsh.

Comments:

- Detritus should feedback to Tier 1 and Tier 2
- Split Tier 2 into 2 Tiers

*Jim, Bruce, Adam, and Larry will update this model for next week's meeting.

Aquatic Vegetation Conceptual Model

Presented by Louise Conrad

Comments:

- Group variables into blocks ?
- Have a different sub model for each of the 3 different aquatic vegetation types (SAV, FAV, & EV)?

*Louise, Ted, and Pascale will update this model for next week's meeting.

Salmon Conceptual Model

Presented by Pascale Goertler

Comments:

- Group environmental variables.
- Put water diversions & contaminants off to the side of the model; those impacts occur outside the marsh

- Prepare a model on how transient salmon may use tidal marsh habitat

*Louise, Ted, and Pascale will update this model for next week's meeting.

Delta Smelt Conceptual Model
Nothing new since last meeting

Next Steps:

The following suggestions were made as a progression in the conceptual model phase:

1. The book end idea – incorporate variations of each model (ie The multiple vs single life stage of Salmon use in a marsh, Food Web production in a muted vs. highly connected tidal marsh, summer vs. winter tidal marsh processes)
2. To the extent possible, use graphics to show hypotheses (ie tidal exchange conceptual model)
3. Have arrows represent our importance, understanding, and predictability
4. Use computer program Stella to simulate a system over time